DR. M. RONY FRANÇOIS

M. Rony François, M.D., M.S.P.H., Ph.D. was appointed by Governor Bush as the Secretary of the Florida Department of Health on September 15, 2005.

The first Haitian American to lead the Department, Dr. François was born in Port-au-Prince, Haiti. He immigrated to the United States 26 years ago to attend Tallahassee Community College, earning an associate degree in one year. Later transferring to the University of Central Florida (UCF) he obtained a Masters of Art degree in Exercise Physiology.

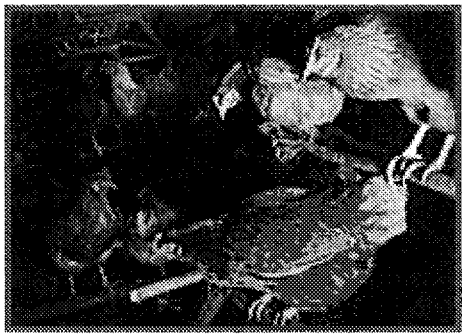
Dr. Francois played professional soccer with the Orlando Lions while working as an exercise physiologist and adjunct math teacher at Valencia Community College.

Dr. François served as a medical program volunteer at the Judeo-Christian Clinic for the Indigent for three years while working on his medical degree, which he received in 1994. He served his first residency in obstetrics and gynecology at Arnold Palmer Hospital in Orlando. He earned his Masters of Science degree in public health in 1998, then enrolled at the University of South Florida (USF) toxicology doctoral program. He completed his Doctor of Philosophy in toxicology/public health degree in August 2003.

The Secretary served a second residency in occupational medicine at USF and began his medical career at Tampa General Hospital as an occupational medicine physician from 1997-1999. From 1998 until his appointment as Secretary of Health, Dr. François also served as the CHD Meridian Medical Director at the Citibank Center in Tampa, was Director of the USF Public Health Practice Program, and an Assistant Professor at the USF College of Public Health, where his research focus was on tracking data to assess the potential link between the environment and disease.

Dr. François served on the United States Environmental Protection Agency's Federal Insecticide, Fungicide, and Rodenticide Act Scientific Advisory Board for the Health Hazards of Copper Chromium Arsenate on Children, as well as a member of the Florida Department of Health's Arsenic Working Group for the Health Hazards of Copper Chromium Arsenate on Children. In early 2005, Dr. François was presented the Outstanding Leadership by Faculty Advisor award at USF and was inducted into the UCF Athletics Hall of Fame.

Dr. François has a wife, Joelle, and three children, Rony Andre, Patrick George, and Joelle Anne.



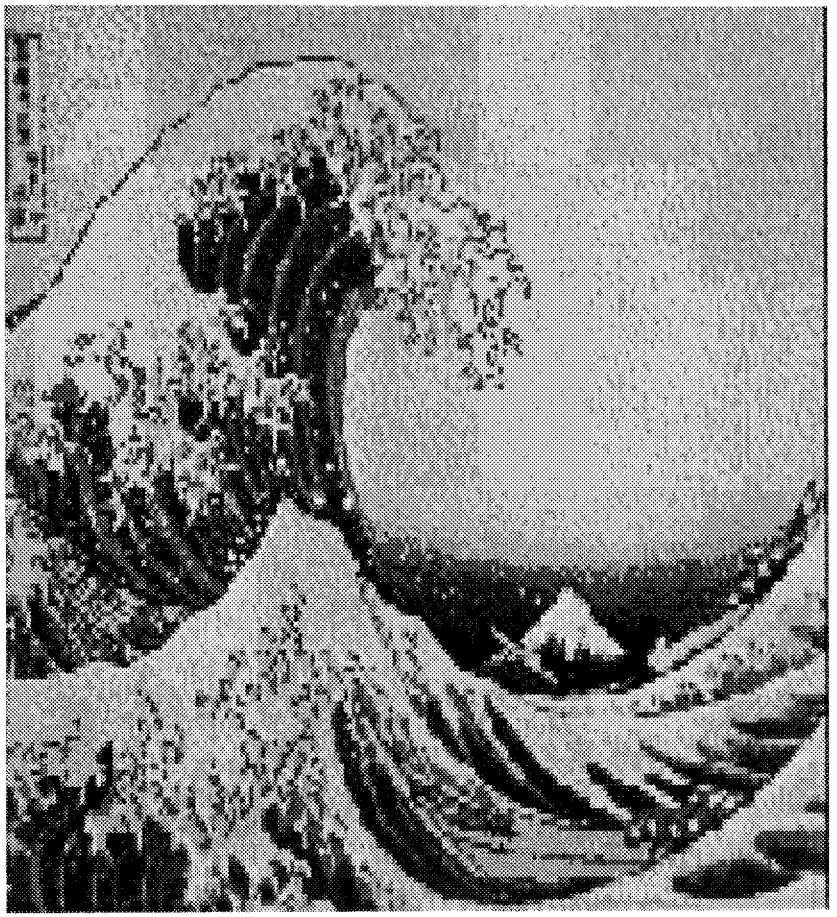
Avian Influenza: The Next Pandemic?

Florida Department of Health
2006

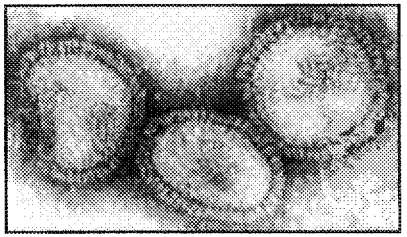
M. Rony François, M.D., M.S.P.H., Ph.D.

Avian influenza is becoming "the perfect storm" ... a storm created by so rare a combination of factors that it could not possibly be worse ...

The Perfect Storm
Sebastian Junger



Etiology

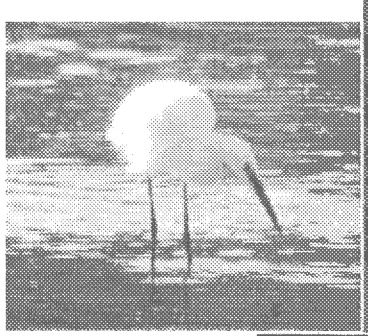


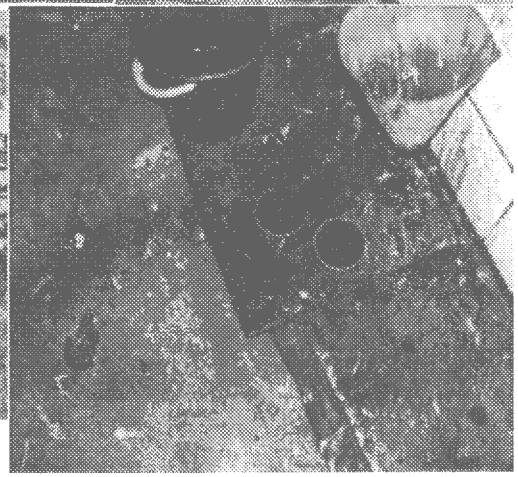
- Viral disease, member of *Orthomyxoviridae*
  - Highly infectious type A virus
  - Incubates rapidly
- Subtypes
  - Hemagglutinin: 16 subtypes
  - Neuraminidase: 9 subtypes
- Highly pathogenic avian influenza (HPA1)
  - H5 and H7
  - H5N1, Asian strain: Human case fatality estimated to be as high as 50%, but not definitely known

History and Evolution of H5N1 HPAI Viruses

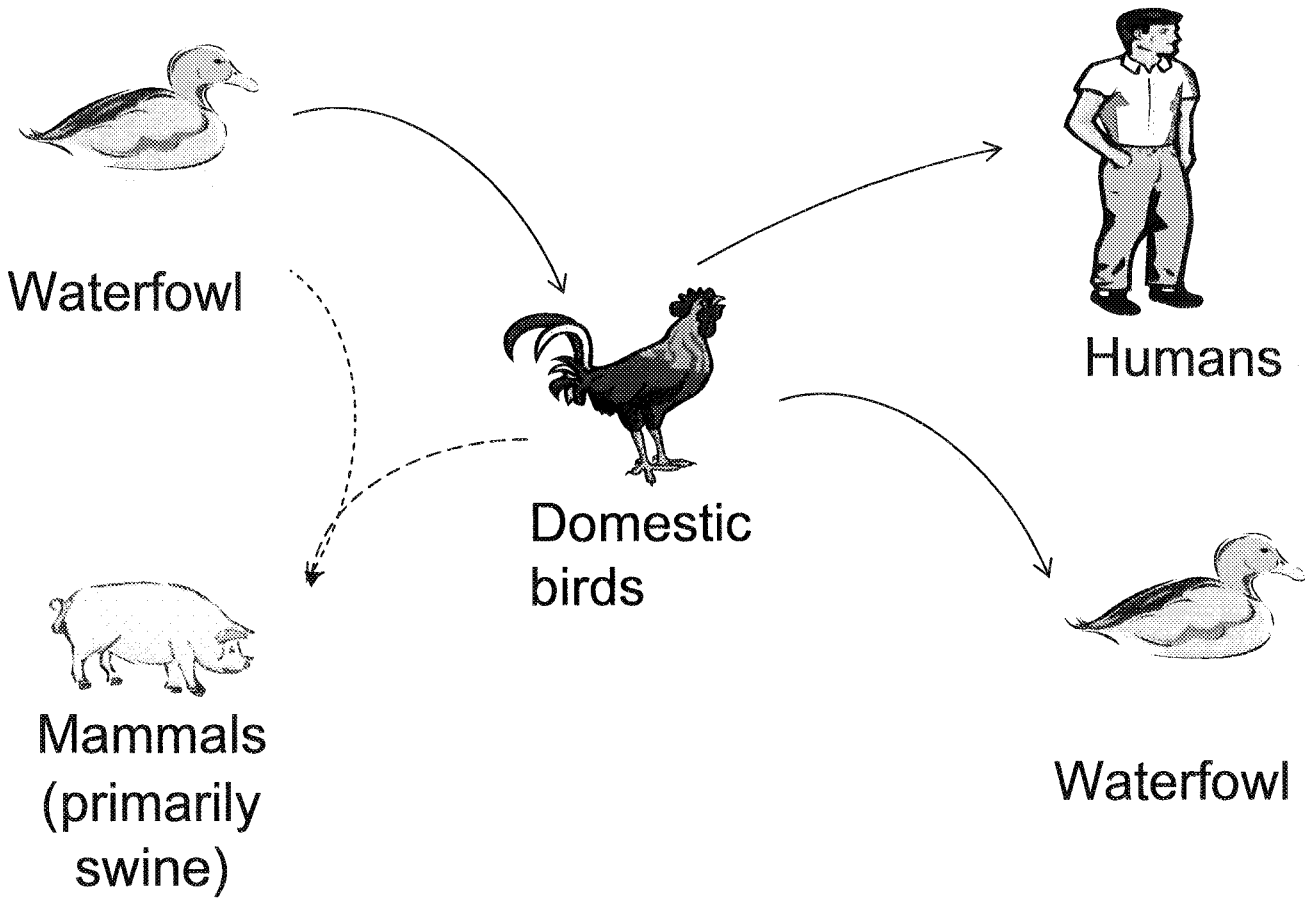
Key epidemiological findings:

- Nomadic or free-range ducks
  - –Contact wild waterbirds
  - –Virus shedding and spreading
  - – Reservoir of infection
- Live bird markets
- Cultural practices



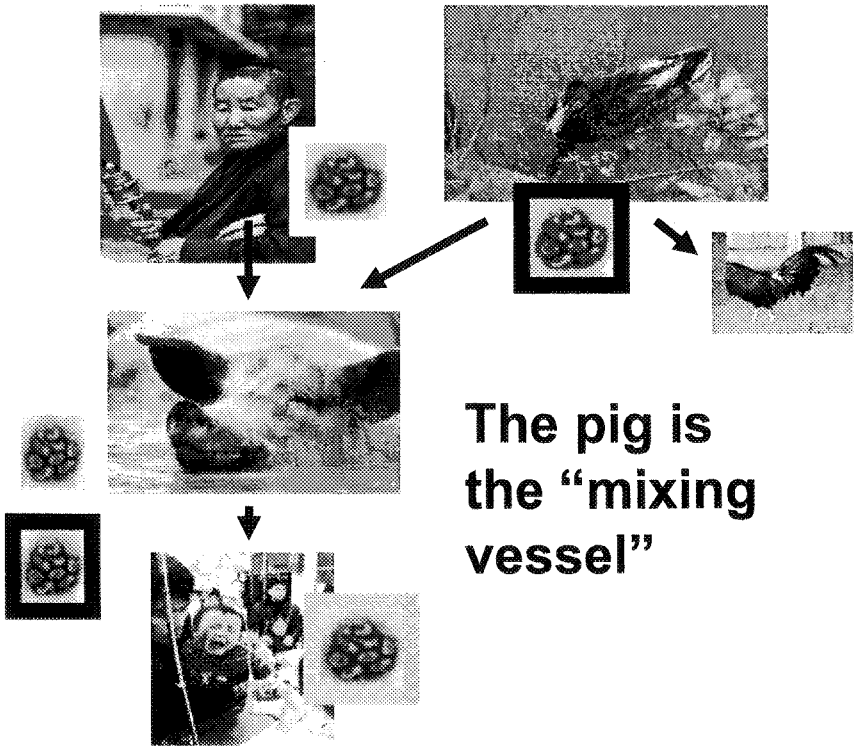


Cycles of the Asian H5N1 Virus in Animals and Humans



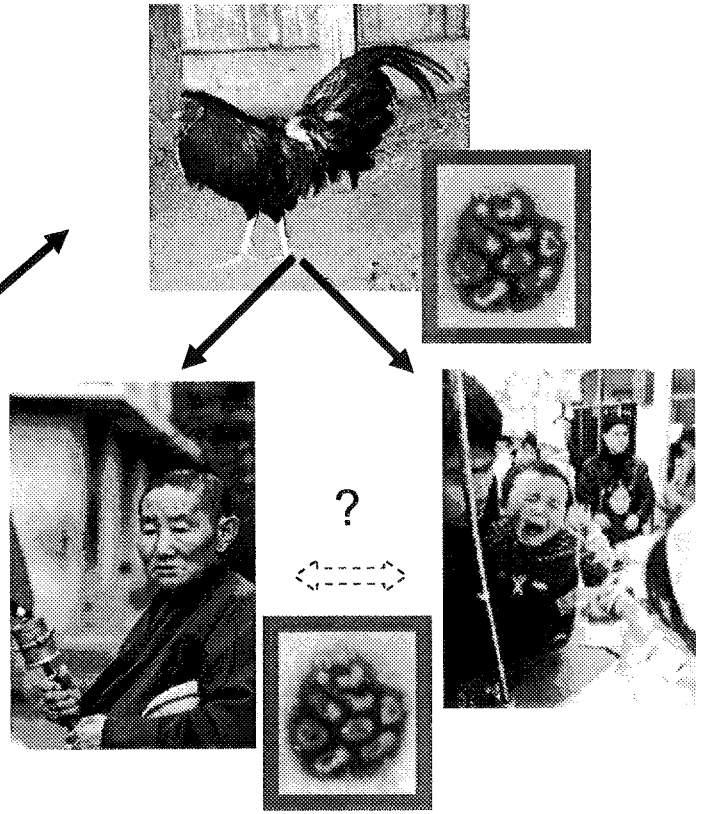
Why H5N1 is of Particular Concern

Traditional belief of antigenic shift leading to pandemics of human influenza



The pig is the "mixing vessel"

H5NI influenza is able to infect humans directly

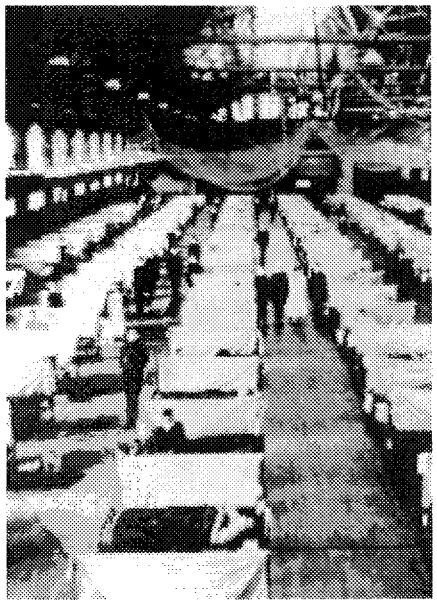


Potential for Influenza Pandemics

- All influenza viruses can mutate
- Avian flu can cause illness in humans
- If avian viruses acquire human genes
  - Facilitate efficient person-to-person transmission
- H5N1 of particular concern

Historic Pandemics

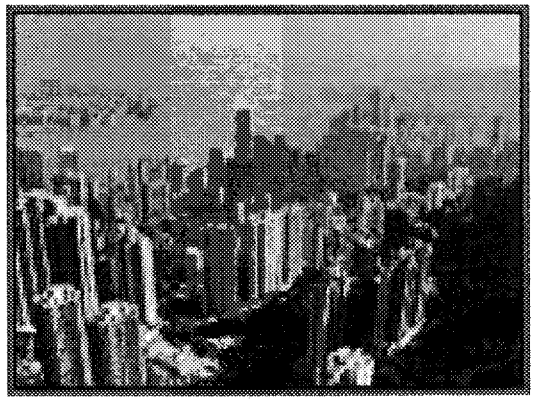
- 1918-1919 Spanish Flu
  - Type A virus (H1N1)
  - 20-50 million deaths worldwide
  - 500,000 deaths in the United States
  - Nearly half were young, healthy adults



Historic Pandemics

- 1957-1958 Asian Flu
  - Type A virus (H2N2)
  - First identified in China February 1957
  - Spread to U.S. by June 1957
  - 70,000 deaths in the United States

Historic Pandemics



- 1968-1969 Hong Kong Flu
  - Type A virus (H3N2)
  - First detected in Hong Kong early 1968
  - Spread to U.S. later that year
  - Approx 34,000 deaths in the United States
    - Our seasonal flu kills 36,000
  - Virus still circulating today

National Strategy for Pandemic Flu

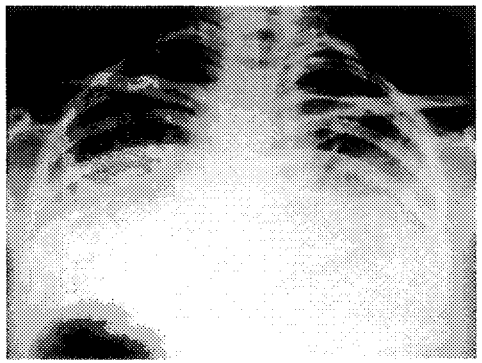
- Preparedness and Communication
- Surveillance and Detection
- Response and Containment

Request to Fund National Strategy

Global surveillance	$ 251 million
Vaccine technology	$ 2.8 billion
Purchase medication and vaccines	$ 800 million
Vaccine for HHS	$ 1.5 billion
Stockpile antivirals	$ 1.0 billion
Emergency preparedness	$ 644 million
Total	$ 7.1 billion

Clinical Symptoms - Humans

- **Typical influenza-like symptoms * (Sudden Onset of)**
  - **Fever**
  - **Cough**
  - **Sore throat**
  - **Muscle aches**
- **Eye infections****
- **Pneumonia**
- **Acute Respiratory Distress (ARDS)**
- **Other severe and life-threatening complications**



*Symptoms of bird flu may depend on which virus caused the infection

**H7N7 outbreak in the Netherlands

Incubation & Communicability

- The virus is spread through droplet nuclei and some airborne
- Short incubation period (usually 1-3 days)
- Infectious period (usually 3-5 days from clinical onset)*

* It is possible that a portion of all infected people will be infectious even though they have no or mild symptoms.

Treatment

- Currently no commercially available vaccine to protect humans
- Antiviral medications:
  - Adamantane derivatives (amantadine and rimantadine)
  - Neuraminidase inhibitors (zanamivir and oseltamivir)*

* Oseltamivir (Tamiflu) is the only antiviral not yet rendered ineffective due to viral resistance and recommended by the WHO

Human Cases of H5N1 Avian Flu 2003-2006

Country	Total Cases	Deaths
Indonesia	27	20
Cambodia	4	4
Thailand	22	14
Vietnam	93	42
China	15	10
Turkey	12	4
Iraq	2	2
Total	175	96

As of 03/09/06 Source: World Health Organization (laboratory confirmed cases)

H5N1 Outbreak in Birds 12/2003 – 03/2006

Countries Affected (confirmed in poultry)

Cambodia	China	Indonesia	Croatia	Slovakia
Kuwait	Japan	Russia	Kazakhstan	Switzerland
Korea (Rep. of)	Thailand	Vietnam	Ukraine	Hungary
Romania	Turkey	Mongolia	Malaysia	Albania
Iraq*	Nigeria	Bulgaria	Greece	Poland
Italy	Iran	India	Egypt	Pakistan*
Austria	Azerbaijan	Germany	France	Serbia & Montenegro*
Bosnia*	Laos*	Slovenia	Niger	

* - *Only H5 confirmed, neuraminidase not* determined

December 2003-March 2006 Source: World Health Organization

Avian Influenza in the US

- Delaware (H7N2)
  - Reported February 6, 2003
  - 12,000 chickens
  - Low pathogenicity
- Texas (H5N2)
  - Reported February 23, 2004
  - First such case in U.S. in 20 years
  - 7,000 chickens
  - Highly pathogenic

What about Avian Flu in Florida?

- Department of Agriculture and Consumer Services monitors poultry flocks in Florida
- Fish and Wildlife Conservation Commission monitors wild birds
- No avian outbreaks currently detected

What is Florida DOH Doing about Avian Flu?

- Protocol for testing in place between DOH labs and Bureau of Epidemiology; approval required
- Protocol requires detailed history of travel, avian exposure & other risks
- No avian flu testing without clinical history and testing for other respiratory diseases
- Close coordination with CDC; testing not available at private reference labs

Vaccine and Testing

- Vaccines probably won't be available for months after the start of an epidemic, and there will be limited supplies initially
- Become familiar with testing protocols/ procedures for state labs now
- Consider the effect of an epidemic on the lab workforce

How is Bird Flu Monitored?

- WHO and CDC maintain regional labs that test both bird and human specimens
- The World Health Organization for Animal Health (OIE) test bird samples
- Periodic updates are provided
- The lab surveillance permits implementation of control measures if needed
- Vaccine trials are underway for the H5N1 strain, but are in early phases

Existing Influenza Surveillance in Florida

- Purposes of current surveillance system:
  - Monitor beginning, peak and end of season
  - Determine which viruses are causing illness
- Network of sentinel physician practices
  - Influenza-like illness as percentage of office visits
  - Influenza cultures in selected practices
- Influenza culture specimens received, positive results, at state Public Health laboratory

Additional Surveillance Needed in Case of an Influenza Pandemic

- Daily tallies of ED visits, hospital admissions, and deaths
  - Total
  - Due to respiratory illness
- Early in the pandemic, intense, rapid, sensitive surveillance for cases due to the new virus to support case-by-case control measures

Influenza Planning and Preparedness

- Recent statewide Influenza Summit
- Existing Influenza plan dated March 2004
- Draft White Paper 9/05 addresses salient policy issues
- Draft Influenza Pandemic Annex to DOH Emergency Operations, Version 9
- There are substantial training needs

What Must Be Done: Public Health

- Global surveillance
- Understand human-animal interface
- Rapid genome sequencing
- Epidemiologic models for communities and states
- An effective intervention strategy to reduce transmission of disease

What Must Be Done: Healthcare Professionals

- Heightened awareness
- Seek consultation from your local county health department or the Bureau of Epidemiology for suspect cases
- Consider avian influenza in travelers returning from countries with cases in humans, collect specimens for culture, and notify public health authorities
- Continued education and training

Pandemic Influenza: Issues

- All communities in Florida and likely throughout the U.S. will be affected at the same time
- Each community will have to deal with the pandemic mostly on their own
- Society as a whole will have to work together to minimize the impact of the pandemic